

Lab 7

Constants, Option Explicit, Immediate Window

GOALS:

1. Students will be able to create a program that involves Constant.
2. Students will be able to debug a program using the Debug.Print statement and the immediate window.

ESSENTIAL QUESTIONS

1. Why are Constants used in programs?
2. Why do you need the Print.Debug statement?

Constants

There are two types of Constants:

1. Numerical Constants
2. Named (Symbolic) Constants

NUMERICAL CONSTANTS

Numerical Constants are just regular numbers. They will always be the value that they represent.

Examples: 8, 5, 3.4

NAMED (Symbolic) CONSTANTS

Named Constants are memory locations that store a value that cannot change. Remember, variables are memory locations that can change its value.

DECLARING CONSTANTS

Declaring constants is very similar to variables. Declaring variables, we use the Dim statement. With constants, we use the Const statement instead of Dim.

Example:

Const dblTAX as double = 0.06

Notice: When naming constants, the word the follows the prefix should be all caps. You are also allowed the use the assignment statement (=) with a value. You can't assign variables values when they are being declared.

OPTION EXPLICIT

Option Explicit - Is used to display an error message if a variable hasn't been declared or if it is misspelled.

Two ways to put the option explicit statement in your program

1. Type it in Option Explicit at the top of your screen.
2. Select the Tools menu, then Option command, select the editor tab, then select Require Variable Declaration option.

ERRORS

Three types of errors:

1. Syntax errors – Statements that violates the rules of Visual Basic

2. Run Time error – Errors occur during run-time
3. Logical error – Program works but wrong output

DEBUG.PRINT

Debug.Print statement allows the user to inspect variables value throughout the program run and displays the results in an immediate window. All you have to do is type Debug.Print follow by the variable you want to inspect at the point in the program where you want to know the value of the variable.

PRACTICE PROGRAM

Step 1: Create the following program



Step 2: Name the objects

Form → frmLab7
Label1 → lblDisplay
Text1 → txtInput
Label2 → lblAnswer
Command1 → Click
Command2 → Done

Step 3: Put the Captions in

Step 4: Type the following code in the click button

```
Private Sub cmdClick_Click()  
    Dim intVal As Integer  
    Dim intHold As Integer  
  
    intVal = txtInput.Text  
    intHold = intVal + 5  
  
    lblAnswer.Caption = intHold  
End Sub
```

Step 5 Make sure you put Option Explicit statement in and Run

QUESTIONS

1. What is the value of intVal after it was assigned to the txtInput.text object?
2. What is the value of intHold?
3. What is the purpose of Option Explicit? Try spelling a word wrong with Option Explicit coded: What happened? Remove Option Explicit and run again: What happened?

PART 2

Step 1: Make the following change to your code

```
Private Sub cmdClick_Click()  
    Const intHold As Integer = 4  
    Dim intVal As Integer  
  
    intVal = txtInput.Text  
    intHold = intVal + 5  
  
    lblAnswer.Caption = intHold  
End Sub
```

Step 2: Try running it

QUESTION:

1. Did it work?
2. Which line of code caused the error?Why?

PART 3

Step 1: Type the following code:

```
Private Sub cmdClick_Click()  
    Dim intVal As Integer  
    Dim intHold As Integer  
    Debug.Print intVal; intHold  
    intVal = txtInput.Text  
    Debug.Print intVal  
    intHold = intVal + 5  
    Debug.Print intHold  
    lblAnswer.Caption = intHold  
End Sub  
  
Private Sub cmdDone_Click()  
    Unload Me  
End Sub
```

Step 2 Run and Save

Step 3 Make sure the immediate window is showing on your screen Select view menu if not

QUESTIONS:

1. What did the Debug.Print statement do?
2. What was the purpose of the immediate window?
3. How can you use the Debug.Print statement to find errors in your code?